

Three new genera of Mymaridae (Hymenoptera) from the Neotropical region

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Academic editor: Petr Janšta | Received 9 February 2022 | Accepted 23 June 2022 | Published 31 August 2022

<https://zoobank.org/204EA08B-0B9A-482A-975A-6C2ED86EA7E1>

Citation: Huber JT, Read JD (2022) Three new genera of Mymaridae (Hymenoptera) from the Neotropical region. Journal of Hymenoptera Research 92: 1–21. <https://doi.org/10.3897/jhr.92.81917>

Abstract

Three new genera and species of Mymaridae from the Neotropical region are described: *Megamymar waorani* Huber, **gen. and sp. nov.**; *Neopolynemoidea chilensis* Huber, **gen. and sp. nov.**; and *Porcepicus herison* Huber, **gen. and sp. nov.**. Their possible relationships are discussed to place them in context among the previously described genera of Mymaridae.

Keywords

fairyflies, new genera and species, South America, taxonomy

Introduction

Mymaridae are a relatively large family of Hymenoptera, at present including about 100 valid genera, 90 of them extant and 10 extinct, including 2 fossils that may be misplaced in Mymaridae. This is almost double the number treated in the only world key (Annecke and Doutt 1961). Over the past 60 years but especially during the last 40 large numbers of specimens have accumulated in major institutions. These were sometimes collected using Malaise or yellow pan traps in previously poorly collected countries or areas, or in unusual habitats such as in tree canopies or soil. As a result, many new species continue to be discovered and publications that attempt to define generic limits more precisely must take them into account. Nevertheless, the limits for many previously described valid genera still remain unclear and may become even

more unclear because of the additional species discovered. Their limits could perhaps be redefined to include or exclude species that are near the edge of a given generic concept. If excluded, such species could be placed, perhaps doubtfully, into another genus where they appear to fit better. However, specimens occasionally are found that are clearly so unusual that they cannot be placed reasonably into any existing generic concept. These specimens not only represent new species but also new genera. Three are described below to make their names available for a planned generic key and species catalogue of Mymaridae in the Neotropical region excluding Mexico.

Methods

Specimens were point or card mounted and photographed. Because of its large size, the specimen representing the first genus and species was retained on a point mount and photographed using a ProgRes C14^{plus} digital camera mounted on a Nikon SMZ1500 microscope; its description and, especially, measurements are therefore not as accurate as for the other two species. One specimen of each of the other two species was dissected and slide mounted in Canada balsam. These specimens were photographed at different focal planes using the same camera as above mounted on a Nikon Eclipse E800 compound microscope, and the resulting layers combined and refined using Zerene Stacker™. The layers were edited from the top of the focus stack down to produce one image showing surface structures. For certain views, such as posterior or ventral, the layers were combined and edited from the bottom up. These views were flipped either horizontally or vertically in Adobe Photoshop to appear as if the specimen was photographed from that surface. A unique image number is given to different structures but if different planes of the same structure (from the same individual) are illustrated, e.g., of the metasoma (Fig. 10), then the different planes are given the same number with different letters. Body length of a card-mounted paratype of each of two species was measured with an ocular micrometer mounted in a Leitz-Wetzlar binocular microscope at 64× or 160× magnification, as needed. Morphological terms follow Gibson (1997), with some terms from Huber (2015). Measurements are given in micrometres (μm) except body and ovipositor length of the largest species are in millimetres (mm). Because of rounding errors, it appears that the ratios are slightly incorrect compared to those calculated using the absolute measurements (micrometres) but, in fact, those calculated from the ocular micrometer readings before converting to micrometers are more accurate, so are given in the descriptions.

Abbreviations used

f = flagellar segment (in males), **fu** = funicular segment (in females), **gt** = gastral tergum, **LOL** = distance between a lateral ocellus and median ocellus, **mps** = multiporous plate sensillum, **OOL** = distance between a lateral ocellus and eye margin, **POL** = distance between lateral ocelli. The specimen depositories are:

- CNC** Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Ontario, Canada;
- UCRC** Entomology Research Museum, Department of Entomology, University of California, Riverside, California, USA;
- USNM** National Museum of Natural History, Washington, District of Columbia, USA.

Results

Megamymar Huber, gen. nov.

<https://zoobank.org/F50653C9-CDA8-497F-B141-8A3D0B35884B>

Fig. 1

Type species. *Megamymar waorani* Huber, here designated.

Diagnosis. With the following combination of features: body huge (for a fairyfly), together with exserted section of the ovipositor well over 9 mm long; median ocellus abutting transverse trabecula; petiole distinctly shorter than gaster and, in dorsal view, completely hidden; metatarsus 1 longer than metatibia; gaster extending as horn anterodorsal to mesosoma.

Description. Female. **Head.** Head slightly wider than mesosoma (21: 20), ~1.4× as wide as long, ~1.1× as wide as high and almost 1.25× as high as long, measured laterally; transverse trabecula entirely dark; supraorbital trabecula with well sclerotized (dark) anterior half short, extending posteriorly only to level of posterior margin of median ocellus, then continuing posteriorly as poorly sclerotized (light) section extending as far as anterior margin of lateral ocellus and further continuing obliquely towards but not reaching occipital foramen as a faint, fine line. Face ~0.5× as wide as high, in lateral view upper face receding to transverse trabecula and lower face flat and, in anterior view, with distinct depression medially dorsal to oral cavity and short, narrow vertical depression ventral to torulus; torulus ~0.5× its own height from transverse trabecula; preorbital sulci slightly converging medially just ventral to toruli then continuing straight ventrally to dorsolateral angle of oral cavity. Compound eye slightly shorter than malar space and apparently with very few short setae among the ommatidia. Vertex in lateral view slightly curved, posteriorly merging smoothly with occiput; median ocellus abutting transverse trabecula; POL 2.0× LOL and ~1.7× OOL. Gena ventrally in lateral view longer than eye length but dorsally much shorter. Back of head without sulci and oral cavity well separated from occipital foramen. **Antenna.** Scape with radicle barely differentiated; funicle 6-segmented; clava 1-segmented. **Mouthparts.** Mandibles apparently with 3 teeth, meeting when closed. **Mesosoma.** Mesosoma almost 2.6× as long as wide, almost 3.2× as long as high, and ~0.8× as wide as high. Pronotum entire, in lateral view almost horizontal, with flat dorsum, in dorsal view triangular and, including neck, almost as long as mesoscutum. Prosternum ~1.3× as long as wide, and entire. Mesoscutum just over 2.0× as long as scutellum + frenum, in lateral view flat; notaular incomplete, ~0.3 as

long as mesoscutum as measured from their junction with anterior margin. Scutellum ~4.0× as long as poorly defined frenum; axilla barely advanced, each ~1.0× as wide as long. Metanotum slightly longer than frenum, without obvious dorsellum. Propodeum slightly longer than scutellum + frenum, with a shallow and narrow longitudinal median depression, in lateral view almost horizontal; spiracle in a shallow wide depression. **Wings.** Fore wing fairly wide, with apex rounded and slightly asymmetrical, and with almost straight margin behind venation; venation ~0.2× as long as wing length; parastigma with proximal but apparently without distal macrochaetae, with hypochaeta next to proximal macrochaeta. Hind wing narrow and almost straight. **Legs.** Legs long; tarsi 4-segmented, with tarsomere 1 of all legs longer than tibiae. **Metasoma.** Metasoma ~2.3× as long as mesosoma (Fig. 1). Petiole ~3.4× as long as wide, in dorsal view hidden by anterior extension of gaster. Gaster (measured to anterior apex of anteriorly truncate dorsal horn) ~6.4× as long as wide and ~1.2× as high as wide; gt_5 apparently the longest tergum (Fig. 1). Ovipositor with exserted portion extremely long.

Male. Unknown.

Derivation of genus name. A euphonious combination from Greek: *megas*, meaning large, and *Mymar*, the name of the type genus of Mymaridae. The genus name is neuter. *Mega* refers to the large body of the only known species of the genus, which is over 1 mm longer than the next longest Neotropical species, *Erdosiella mira* (Annecke & Doutt), whose body length is 3.7 mm.

Relationships. *Megamymar* is best placed in Mymarini *sensu* Annecke and Doutt (1961) because of the combination of 6-segmented funicle, 4-segmented tarsi and distinctly petiolate gaster. Among the genera of Mymarini, the supraorbital trabecula extending posteriorly only to the level of the median ocellus, the fore wing shape, short fringe setae and venation with relatively long parastigma indicate that *Megamymar* is most closely related to *Erdosiella* Soyka and *Tanyostethium* Yoshimoto in the New World, and perhaps *Narayanella* Subba Rao in the Old World. *Megamymar* is clearly separated from these three genera by the petiole much shorter than the gaster and the anterodorsal extension of the base of the gaster over the apex of the propodeum; none of their species have this combination of features. Instead, in these genera the supraorbital trabecula extends to about the level of the lateral ocelli, the petiole is usually as long or longer than the gaster, and gt_1 does not project anteriorly over the propodeum though occasionally the base of gt_1 may slant slightly anteriorly before receding uniformly and smoothly posteriorly to the anterior margin of gt_2 . It could perhaps be argued that the features of *Megamymar* are just one of degree rather than substance and therefore *Megamymar* should be treated as just an extreme representative of *Erdosiella*, but then many of the numerous genera of Mymarini should be placed in synonymy under one another as well. Whether such an approach would clarify generic relationships within Mymarini is debatable.

Megamymar superficially resembles several of the largest species of *Australomyrm* Girault and the extralimital genera *Borneomyrm* Huber, *Neotriadomerus* Huber and *Paranaphoidea* Girault. At least some species in all these genera, none of which are morphologically closely related to *Megamymar*, have a long ovipositor often greatly exserted posteriorly (*Australomyrm*, *Borneomyrm*, *Polynemoidea* Girault) or anteriorly

(*Neotriadomerus*). In the Neotropical region, *Australomyrmecia* appears superficially to be the most similar looking genus but the body of the largest species is at most ~3.0 mm long and the base of the female gaster does not extend anteriorly in a dorsal horn (the gastral sac). In other genera of Mymaridae the ovipositor may extend anteriorly but it is always ventral to the mesosoma.

***Megamymar waorani* Huber, sp. nov.**

<https://zoobank.org/4C5905C4-D5E8-4412-8676-B0146071C225>

Fig. 1

Material examined. *Holotype* female (USNM) on triangular card point labelled 1. "ECUADOR: NAPO Res. Ethnica Waorani, 1km S. Onkone Gare Camp, Trans.Ent. 9 Oct. 1994 220m 00°39'10"S, 76°26'W T.L. Erwin et al.". 2. "Holotype *Megamymar waorani* Huber". 2. "Insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terra firme forest. At Trans 5m Sta. 4 Project MAXUS Lot 913" 3. "HOLOTYPE f# Megamymar waorani Huber".

Diagnosis. *Megamymar waorani* is the only described species in the genus. Its diagnosis is therefore the same as for the generic description, i.e., ovipositor extending anteriorly in a short, truncate gastral sac dorsal to propodeum (Fig. 1).

Description. Female. Colour. Body orange-yellow, with metasoma except for apical tergum and sternum slightly lighter; transverse trabecula and mandibles dark reddish-brown; scape and pedicel dark yellow, fu_1-fu_4 brown except slightly lighter apex of fu_4 , fu_5 cream coloured, fu_6 and clava dark brown; legs same colour as body except mesotibia slightly darker yellow, mesotarsomere brown, and metatibia and tarsus almost black. Fore wing clear except yellowish suffusion posterior to and slightly distal to venation; hind wing clear (Fig. 1). **Body length.** 4.8 mm, excluding exserted part of ovipositor, which extends 4.9 mm posterior to apex of gaster. **Head.** Head width ~535. Entire face with fine engraved but slightly granulate sculpture and with 2 sublateral setae, about 6 lateral setae and a dense patch of thicker setae sublaterally and laterally at mouth margin. Vertex with 2 setae between lateral ocelli, apparently 2 minute setae lateral to median ocellus, and engraved, slightly granulate reticulations at least anteriorly. Back of head with faint engraved reticulations, 1 short seta posterolateral to lateral ocellus, and a few minute setae lateral to foramen and sublaterally on gena. **Antenna.** Scape with faint, fine transverse sculpture on inner surface and apparently at least 1 very short seta, on dorsal margin at least. fu_6 with at least one longitudinal row of 6 or 7 short mps, clava with numerous (11 on at least one surface) short scattered mps; funicle slender, with segments barely widening towards apex, each with apex squarely truncate and with numerous short setae. Length/width measurements (ratio, calculated from eyepiece micrometer measurements before converting to micrometres): scape 220/120 (1.83); pedicel 120/60 (2.00), fu_1 240/30 (8.00); fu_2 545/30 (18.33); fu_3 910/40 (23.00); fu_4 645/50 (13.00); fu_5 495/60 (8.33); fu_6 385/80 (4.87), clava 604/90 (6.78). **Mesosoma.** Pronotum with 2 setae anteriorly and 1 seta posterolaterally, and with faint raised reticulate sculpture. Mesoscutum with faint raised reticulate sculpture, 1 adnotular seta at extreme anterior

margin and 1 lateral seta posterolaterally on lateral lobe. Scutellum with faint engraved reticulate sculpture and without setae; axilla with 1 small seta; frenum apparently with faint sculpture. Propodeum with 1 propodeal setae well separated from spiracle and with faint reticulate sculpture. **Wings.** Fore wing with a single line of microtrichia separating bare space posterior to parastigma from bare space anterior to retinaculum; hypochaeta next to proximal macrochaeta, distal macrochaeta not visible (absent?); wing length 3900, width 845, length/width 4.62, longest marginal setae 100, venation length 820, spur 100. Hind wing with median row of microtrichia but only a few distally along anterior and posterior margins; wing length 2400, width 50, longest marginal setae 155, venation length 770. **Legs.** Metatibia and tarsomeres 1 and 2 with short, dense setae; tarsomere 1 slightly longer than metatibia. **Metasoma.** Petiole (mostly hidden by metacoxae and gt_1) ~310 long, width 90. Gaster with terga and sterna apparently transparent above yellow ground colour; middle terga apparently the longest segments (not accurately measurable). Ovipositor length (visible part only, the part concealed within gaster not measurable) 5500, the exserted length 4900 with hooked apex.

Derivation of species name. The species is named after the indigenous Waorani people of Ecuador in whose reserve *M. waorani* was collected. Their way of life has been seriously affected by resource extraction and settlement by colonists. The species name is treated as a noun in apposition.

Biology. Unknown, but because of its size, likely a solitary parasitoid in large insect eggs. We suggest that the host is most likely a species of Orthoptera. First, despite *M. waorani* being the third longest fairyfly species known worldwide, after specimens of a species of *Neotriadomerus* from Australia and specimens of one species of *Australomyrmeces* from New Zealand, it has apparently never been collected at ground level, despite considerable Malaise or pan trapping in equatorial rain forests of the Neotropical region. Second, the host egg must be at least 4.8 mm long and eggs of this size are mostly likely to be found among species of Orthoptera. Third, although hosts of any species of Mymaridae with body length over 3.0 mm are unknown, one relatively small (~1.3 mm) species of *Australomyrmeces* has been reared from Tettigoniidae (Orthoptera) and one large (2.5 mm) species of *Acmonoplynema* Ogloblin has been reared from *Oecanthus* spp. (Orthoptera: Gryllidae).

Neoplynemoidea Huber, gen. nov.

<https://zoobank.org/58E1ADB3-3B0C-4EFA-9356-5CCF75554A0C>

Figs 2–10

Type species. *Neoplynemoidea chilensis* Huber, here designated.

Diagnosis. Female with the following combination of features: toruli almost touching transverse trabecula (Fig. 2a); scape over 10× as long as greatest width and 1.4× as long as head width, funicle 6-segmented and clava 3-segmented (Fig. 3); fore wing venation extending almost 0.7× wing length (Fig. 7).

Description. Female. **Head.** Head slightly wider than mesosoma (24: 21), ~1.8× as wide as long, ~1.6× as wide as high and almost 1.2× as high as long, measured laterally; transverse trabecula entire (Fig. 2a); supraorbital trabecula apparently entire. Face

1.2× as wide as high; torulus ~0.25× its own height from transverse trabecula; preorbital sulcus not bulging ventral to eye. Compound eye ~2.0× as long as malar space and with a few short setae among the ommatidia. Vertex in lateral view strongly curved, becoming vertical posteriorly so in same plane as occiput; median ocellus well separated from transverse trabecula; POL 2.0× LOL and ~2.7× OOL (holotype with left lateral ocellus missing entirely, with a seta where it should be). Back of head without sulci. Oral cavity posteriorly almost confluent with occipital foramen (Fig. 2b). **Antenna.** Scape with radicle barely differentiated; funicle 6-segmented; clava 3-segmented, with the sutures slightly oblique or transverse (Figs 3, 4). **Mouthparts.** Mandibles apparently with 3 teeth, barely meeting when closed (Fig. 2a). **Mesosoma.** Almost 2.0× as long as wide, almost 1.4× as long as high, and 0.75× as wide as high. Pronotum in lateral view short, vertical, in dorsal view apparently longitudinally divided medially and not visible except laterally. Prosternum ~1.9× as wide as long and longitudinally divided medially (Fig. 9b). Mesoscutum just over 0.9× as long as scutellum + frenum, in lateral view strongly curved anteriorly; notauli complete (Fig. 9a). Scutellum ~1.2× as long as frenum, with campaniform sensilla midway between anterior and posterior margins and fenestra an isosceles triangle with rounded corners; axilla slightly but distinctly advanced, ~1.8× as wide as long; second phragma extending to apex of propodeum, with rounded apex. Metanotum ~0.75× as long as frenum, with transversely oval/rhomboidal dorsellum. Propodeum medially about 0.6× as long as metanotum. **Wings.** Fore wing (Fig. 7) fairly wide, with slight lobe posterior to parastigma, and with apex symmetrical and narrowly rounded; venation ~0.6× as long as wing length; parastigma with proximal and slightly longer distal macrochaetae, with hypochaeta close to proximal macrochaeta (Fig. 7). Hind wing (Fig. 8) narrow and almost straight. **Legs.** Legs fairly long; tarsi 4-segmented, with tarsomere 1 of all legs slightly the longest segment or subequal to tarsomere 4 (Fig. 6). **Metasoma.** Metasoma ~0.8× as long as mesosoma (Fig. 6). Petiole ~3.2× as wide as long, barely visible in dorsal view. Gaster ~2.0× as long as wide, and ~1.3× as high as wide; gt_6 the longest tergum, gt_7 (syntergum) conical, gt_2-gt_6 subequal in length (Fig. 10a); cerci normal, but almost vertically positioned on sides of syntergum; apical sternum (outer ovipositor plate) much longer and narrower than preceding sterna (Fig. 10b). Ovipositor arising at level of gt_2 (Fig. 10c) and exserted portion ~0.75× length of internal portion (Fig. 6).

Male. Unknown.

Derivation of genus name. From Greek: *Neo-* meaning new, referring to its occurrence in the New World and *Polynemoidea*, a monotypic genus known so far only from Tasmania. The name *Neopolynemoidea* is given to draw attention to the general similarity the two genera, one from the Old World and one from the New World.

Neopolynemoidea differs from *Polynemoidea* by: toruli almost in contact with transverse trabecula (separated from transverse trabecula by almost its own height in *Polynemoidea*), scape over 10× as long as wide (no more than 3× as long as wide in *Polynemoidea*); fore wing venation at least 0.6× as long as fore wing length (no more than 0.4 as long as fore wing length in *Polynemoidea*).

Relationships. Worldwide, at least 14 genera or subgenera of Mymaridae have females with a 3-segmented clava: *Allanagrus* Noyes & Valentine, *Allarescon* Noyes &

Valentine, *Eustochomorpha* Girault, *Krokella* Huber, *Nesomyrmar* Valentine, *Nesopatasson* Valentine, *Neostethynium* Ogloblin, *Notomyrmar* Doutt & Yoshimoto, *Paracmotemnus* Noyes & Valentine, *Paranaphoidea* (*Idiocentrus*) Gahan, *Platystethynium* (*Platystethynium*) Ogloblin, *Polynemoidea*, *Pseudanaphes* Noyes & Valentine, and *Stethynium* Enock. Except for *Eustochomorpha*, with an 8-segmented funicle in females, all have a 6-segmented funicle. The majority of these genera occur in the southern hemisphere, particularly in the southernmost areas, though several extend well into the northern hemisphere. Two other genera appear to have the clava with 3-segments in at least one species: one *Eustochus* (*Eustochus*) from China was described as having 3-segmented clava (the other described species have a 2-segmented clava) but this may be an artefact of partial antennal collapse, giving the appearance of a third segment; and *Kompsomyrmar* Huber, with a single described species from Australia, appears to have only partial divisions separating the claval segments. The hosts and biology of all but one (*Stethynium*) of the above genera are unknown. Among these, *Krokella*, *Paracmotemnus* and *Polynemoidea* have a fore wing venation longer than half the wing length, as in *Neopolynemoidea*, but none have the extremely long scape in females. Females of the only described species of *Polynemoidea*, however, have a long, exerted ovipositor. Therefore, based wing venation and ovipositor features a close relationship of *Neopolynemoidea* to *Polynemoidea* is proposed as being the most probable.

Neopolynemoidea chilensis Huber, sp. nov.

<https://zoobank.org/C7A589BC-F6FD-442F-A5CC-AC81E07C0EB9>

Figs 2–10

Material examined. **Holotype** female (CNC) in Canada balsam on slide (Fig. 5) labelled: 1. “Chile: Cautin, 1150m, Conguillio Nat. Park, Araucaria Nothofagus Feb. 6.1988 18PT L. Masner Chile Exp.” 2. “*Neopolynemoidea chilensis* f# Huber HOLO-TYPE”. **Paratypes:** one female (CNC) on card, with same locality data as holotype.

Diagnosis. *Neopolynemoidea chilensis* is the only described species in the genus so its diagnosis the same as for the generic description.

Description. Female. Colour. Uniformly brown; scape, pedicel and legs except coxae and metafemur brownish yellow. Fore wing with brown suffusion except for a small clear area distal to stigma, a larger triangular area along posterior margin, a clear area anterior to retinaculum and a small one posterior to parastigma (Fig. 7). **Body length.** 1000 (paratype, card mount). **Head.** Head width ~226. Face with 6 setae ventral to level of ventral margin of torulus and faint engraved reticulations except for a band of more distinct striations extending between eyes ventral to toruli and a narrow dorsal band extending along preorbital groove (Fig. 2a). Vertex with 2 setae between lateral ocelli and slightly more distinct engraved reticulations. Back of head with faint transverse engraved reticulations dorsally, becoming vertical lateral to foramen, 2 short seta dorsal to foramen, and a few shorter setae laterally along eye (Fig. 2b). **Antenna.** Scape with faint, fine longitudinal sculpture on inner surface and several setae on ventral and dorsal margins (Fig. 3). Fu_4 with 1 mps, fu_5 and fu_6 each with 2 mps, clava with 2, 2, and 4 mps on segments 1–3, respectively; funicle with segments enlarging towards apex, each with apex squarely truncate and each with numerous

fairly long setae (Figs 3, 4). Length/width (ratio) (holotype): scape ~320/30 (10.55); pedicel 76/36 (2.11), fu₁ 59/16 (3.08); fu₂ 114/19 (5.96); fu₃ 105/18 (5.70); fu₄ 93/21 (4.46); fu₅ 83/26 (3.19); fu₆ 72/28 (2.57), clava 185/47 (3.92). **Mesosoma.** Pronotum with 2 minute submedial and 2 longer sublateral setae. Mesoscutum with faint engraved reticulate sculpture, 1 adnotaular seta and 1 lateral seta on lateral lobe. Scutellum with faint engraved reticulate sculpture, campaniform sensilla midway between anterior and posterior margins and closer to each other than to scutellar seta, scutellar seta at margin of axillular carina, a minute seta/pit? anterior to apex of scutellar carina, and fenestra an isosceles triangle with rounded angles; axilla with 1 lateral seta and faint engraved reticulate sculpture; frenum with faint reticulate sculpture becoming longitudinal at lateral margin. Propodeum with 2 minute propodeal setae well separated from spiracle and with reticulate sculpture. **Wings.** Fore wing with a single line of microtrichia separating bare space posterior to parastigma from bare space anterior to retinaculum; hypochaeta close to proximal macrochaeta; wing length (holotype) 1210, width 222, length/width 5.46, longest marginal setae 312, venation length 739. Hind wing with a median row of about 15 microtrichia mostly in apical half beyond venation; wing length 1224, width 36, longest marginal setae 216, venation length 376. **Legs.** Metatibia with setae at least 2× as long as tibial width (Fig. 6). **Metasoma.** Petiole ~0.4× as long as wide, distinctly narrower than gt₁ (Figs 6, 9a). Gaster with segments subequal in length except gt₁ slightly shorter; gt₇ triangular, apically truncate. Gt₁ with 2 sublateral setae, gt₆ and gt₇ each with 1 submedian setae, remaining terga with 3 (sometimes 2) submedian/sublateral setae. Ovipositor length 833, ~1.8× as long as metatibia, and exserted length 400.

Biology. Unknown.

***Porcepicus* Huber, gen. nov.**

<https://zoobank.org/1323C799-1EA3-4CFB-A3E9-046B757377A3>

Figs 11–20

Type species. *Porcepicus herison* Huber, here designated.

Diagnosis. Female with the following combination of features: back of head dorsal to foramen with median vertical occipital groove and transverse occipital groove/trabecula extending from eye to eye (Fig. 12a); mandible a small stub without teeth (Fig. 12a); gastral petiole apparently absent and gaster wider than long; body, legs and antenna with prominent stout spines (Figs 11–20).

Description. Female. Head. Head slightly narrower than mesosoma (14:17), ~2.0× as wide as long, ~1.7× as wide as high and ~1.15× as high as long, measured laterally; transverse and supraorbital trabeculae with short dark sections alternating with light sections (Fig. 12a). Face slightly wider than high; torulus ~1.4× its own height from transverse trabecula; preorbital groove bulging laterally ventral to eye. Compound eye ~1.7× as long as malar space and with a few short blunt setae among ommatidia. Vertex posteriorly with sharp, slightly concave margin at junction with occiput (Fig 12b); median ocellus well separated from transverse trabecula; ocelli in a low triangle, with lateral ocelli at posterolateral angle of vertex, and POL ~2× LOL and ~23× OOL. Back of head with vertical occipital

groove, complete transverse occipital groove obtusely angled medially dorsal to occipital foramen, and oral cavity posteriorly almost confluent with occipital foramen (Fig. 12b). **Antenna.** Scape with radicle barely differentiated; funicle 6-segmented; clava 1-segmented (Figs 14a, b). **Mouthparts.** Mandibles without teeth, with rounded apex shorter than maxilla, presumably not meeting when closed (Fig. 12a). **Mesosoma.** Mesosoma $\sim 0.8\times$ as long as wide, $\sim 1.2\times$ as long as high, and $\sim 1.4\times$ as wide as high. Pronotum in lateral view almost vertical, apparently longitudinally divided medially, in dorsal view barely visible except laterally. Prosternum almost $2.0\times$ as wide as long and longitudinally divided medially (Fig. 19). Mesoscutum as long as scutellum + frenum, in lateral view flat; notauli incomplete, barely indicated anteriorly (Fig. 18a). Scutellum $\sim 0.25\times$ as long as frenum, without campaniform sensilla or fenestra; axilla barely advanced, about as long as wide; second phragma extending to apex of propodeum, widely truncate apically. Metanotum linear and barely visible, without defined dorsellum. Propodeum medially $\sim 5.0\times$ as long as metanotum. **Wings.** Fore wing narrow and curved (Fig. 15) with distinct lobe posterior to parastigma; venation $\sim 0.3\times$ as long as wing length; parastigma with distal macrochaeta but without proximal macrochaeta or hypochaeta. Hind wing (Fig. 16) with distinct bend in basal third beyond venation, with anterior margin concave and posterior margin convex. **Legs.** legs short; tarsi 5-segmented, with protarsomere 1 the longest segment, and meso-and metatarsomere 1 the shortest segments. **Metasoma.** Metasoma $\sim 0.8\times$ as long as mesosoma (Figs 18a, 20). Petiole vertical, not visible in dorsal view, $\sim 10\times$ as wide as long (high). Gaster $\sim 1.2\times$ as wide as long, and $\sim 1.1\times$ as wide as high; gt_2 and gt_3 the longest terga, gt_1 planoconvex, the almost straight anterior margin and curved posterior margin meeting laterally to form an acute angle (Fig. 18a); cercus apparently with only 2 cercal setae. Ovipositor arising in apical half of gaster, slightly less than $0.5\times$ gaster length and slightly less than $0.5\times$ metatibia length.

Male. Unknown.

Derivation of genus name. An arbitrary combination of letters based on the French word for porcupine, porc-épine, referring to the long and strong setae distributed on the antenna, body, and legs.

Relationships. *Porcepicus* belongs to the *Camptoptera* group of genera. It appears to be most similar to *Camptoptera* by the back of the head having a vertical occipital groove, transverse occipital groove, and narrow and curved fore wing and lack of a hypochaeta. The 6-segmented funicle in females, slightly dorsoventrally flattened mesosoma, gaster wider than long, and apparent absence of a petiole distinguishes it from *Camptoptera* Foerster as well as the other genera in the genus group.

Porcepicus herison Huber, sp. nov.

<https://zoobank.org/6642FF75-B403-4E19-9897-AD8676F847A4>

Figs 11–20

Material examined. **Holotype** female (CNC) in Canada balsam on slide (Fig. 17) labelled: 1. “Peru: Loreto 220m Teniente Lopez $2^{\circ}36'S$, $76^{\circ}07'W$, 22.VII.1993, R. Leschen FIT” 2. “*Porcepicus herison* f# HOLOTYPE”.

Paratypes: Four females. PERU. Same locality data as holotype (2 females on cards, CNC); Junín River, NW of San Ramón, Río Oxabamba, San Fernan Farm, 925 m, 11°5'36"S, 75°23'43"W, 30.vi.2010, M. Hoddle, MT [Malaise trap] (1 female on slide, UCRC, UCRC ENT 285052); San Martín, 19 km NE Tarupoto, 950 m, 6–8.vii.2004, B. V. Brown, MT (1 female on point, UCRC, UCRC ENT 457917).

Diagnosis. *Porcepicus herison* is the only described species in the genus so its diagnosis is the same as for the generic description.

Description. Female. Colour. Body brown (mesoscutum light brown in one paratype) except anterior surface of gt_1 , white; legs light brown, pedicel and tarsi almost white; thick setae and their sockets on body, antenna and legs dark brown (Figs 11, 20). **Body length.** 310–330 μm (paratypes). **Head.** Head width 145. Face almost smooth, with 4 fairly long strong setae at or ventral to level of ventral margin of torulus. Vertex with shallow transversely reticulate sculpture and 2 long strong erect setae on each side of lateral ocellus. Gena with 1 strong seta lateral to oral cavity (Fig. 12a, b). Back of head (Fig. 12b) with faint transverse to oblique reticulate sculpture and 2 short setae dorsal to occipital groove. **Antenna.** Scape with faint trace of longitudinal sculpture on inner surface and about 4 long setae on ventral and dorsal margins; pedicel 0.8× as long as scape, with ventral margin strongly indented basally; funicle with segments enlarging towards apex, each with apex obliquely truncate (Figs 13, 14) and with 1 or 2 long, fairly strong setae on ventral margin; fu_2-fu_5 each with 1 (possible 2) mps; clava with 1 (possibly 2) longitudinal mps (Fig. 14). Length/width (ratio) (holotype): scape ~55/23 (~2.30), pedicel ~35/25 (1.40), fu_1 15/9 (1.67), fu_2 11/11 (1.00), fu_3 11/12 (0.92), fu_4 15/13 (1.15), fu_5 16/13 (1.23), fu_6 17/16 (1.06), clava 50/24 (2.08). **Mesosoma.** Pronotum with 1 long strong lateral seta; mesoscutum with transverse reticulate sculpture and 1 long strong seta at lateral angle; scutellum without campaniform sensilla and apparently smooth; axilla smooth, with 1 long strong seta; frenum with faint transverse reticulations medially, becoming longitudinal at lateral margin. Propodeum with long strong seta, its base almost in contact with small circular spiracle. **Wings.** Fore wing with a row of about 9 microtrichia between usual anterior and posterior rows; wing length (holotype) 368, width 32, length/width 11.5, longest marginal setae 157, venation length 114. Hind wing medially with anterior row of about 15 microtrichia and posterior row of 3 microtrichia; wing length 379, width 12, longest marginal setae 114, venation length 103. **Legs.** Meso- and metatibia each with 3 long strong setae on dorsal margin; coxae and femora with shorter, moderately strong setae (Fig. 18a). **Metasoma.** Gaster apparently smooth (Fig. 18a); gt_2-gt_5 each with 1 or 2 long strong sublateral and lateral setae; apical tergum with 1 median seta (Fig. 18b). Ovipositor length 45, its apex distinctly anterior to apex of gaster (Figs 18b, 19).

Derivation of species name. The name is an arbitrary combination of letters similar to the French word for hedgehog, hérisson. The name is treated as a noun in apposition.

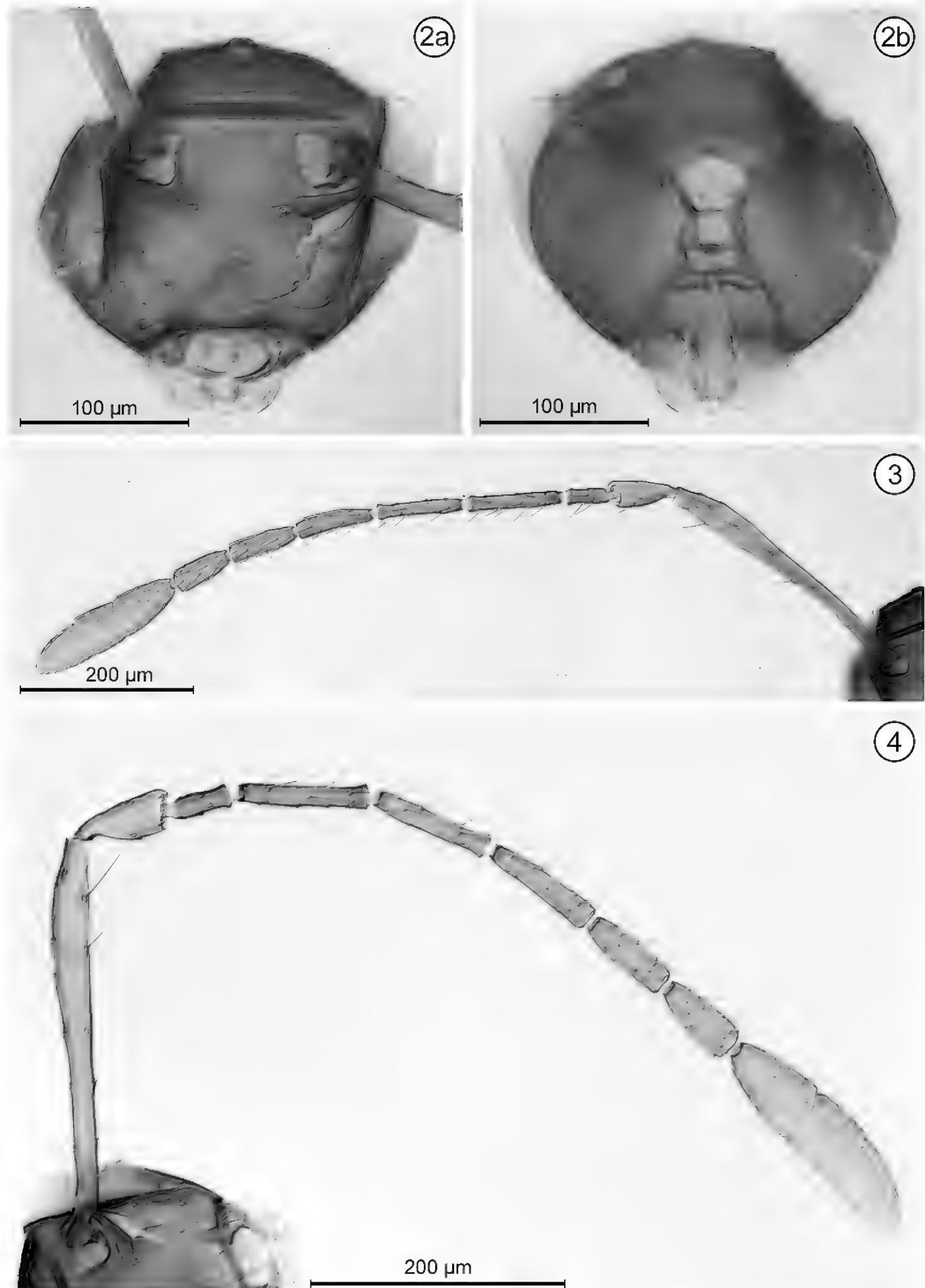
Biology. Unknown. As with most species in the *Camptoptera* group of genera the hosts are unknown. We suggest the hosts are Coleoptera based on at least one record from that order for *Camptoptera* and one for *Litus*.

Discussion

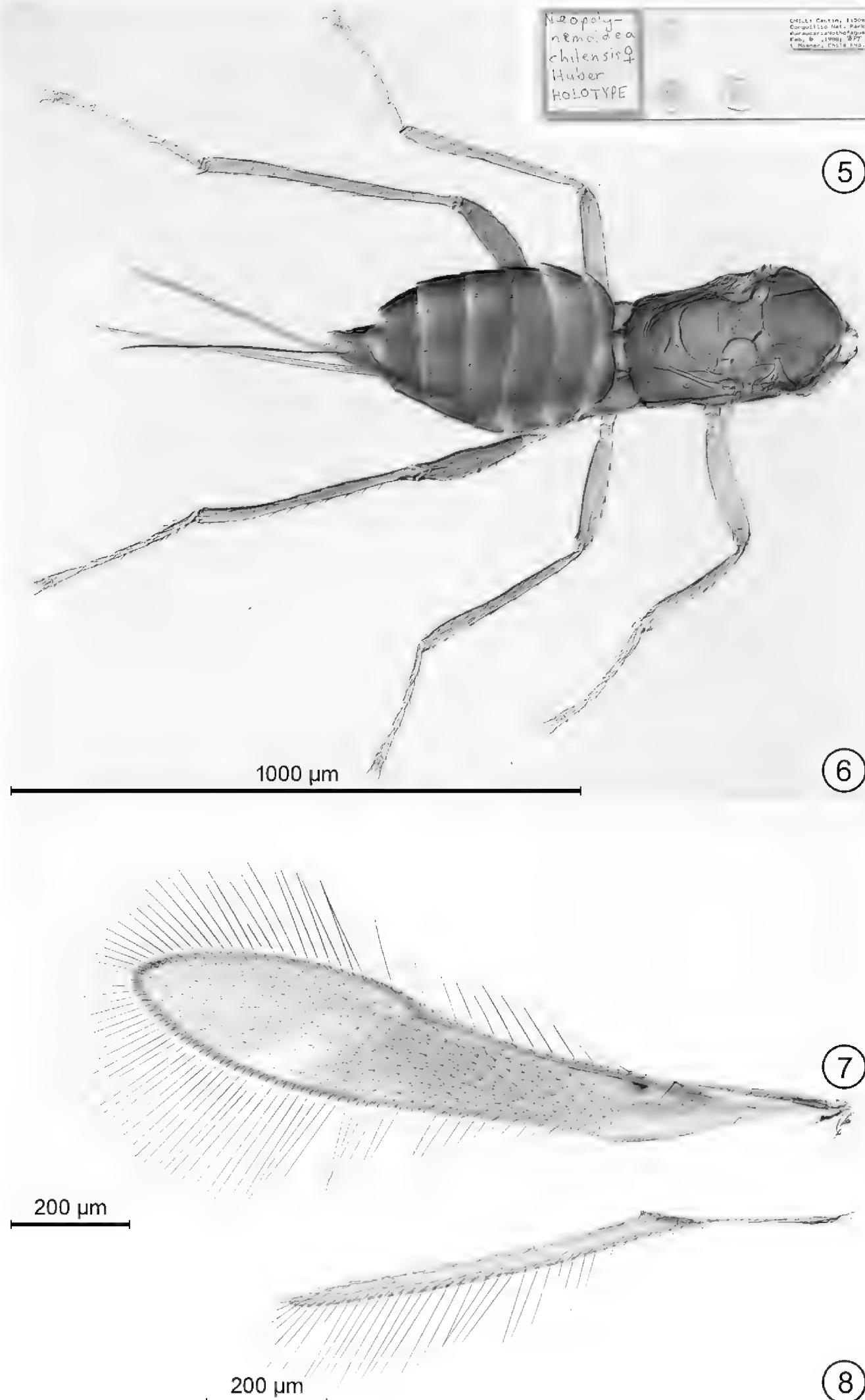
The fairyfly fauna of the Neotropical region is one of the most diverse in the world, with about 50 genera, taking into account synonymies and genera added since Huber (1995, 2006); it is about equal to or second to that of the Australian region (Lin et al. 2007). Generically, the fauna is certainly much more diverse than the Nearctic region including Mexico (Guzmán-Larralde et al. 2017; Huber et al. 2020) and the Afrotropical region (Huber et al. 2020). The species described above do not fit in any previously described genus of Mymaridae in the Neotropical region. While one would expect most new genera to be found among the smaller members (less than 0.5 mm in length) of Mymaridae, it is a surprise that the largest member represents a distinct new genus. This shows how little is really known about the Neotropical fauna, especially in relatively uncollected habitats such as tree canopies of equatorial forests or soil.



Figure 1. *Megamymar waorani* Huber, holotype female, lateral habitus (ovipositor photoshopped to curve downward to fit page better).



Figures 2–4. *Neopolynemoidea chilensis* Huber, holotype female **2a** head, anterior **2b** head posterior (seen through head and flipped horizontally) **3** right antenna **4** left antenna.



Figures 5–8. *Neopolynemoidea chilensis* Huber, holotype female **5** holotype slide **6** habitus without head, dorsal **7** fore wing **8** hind wing.

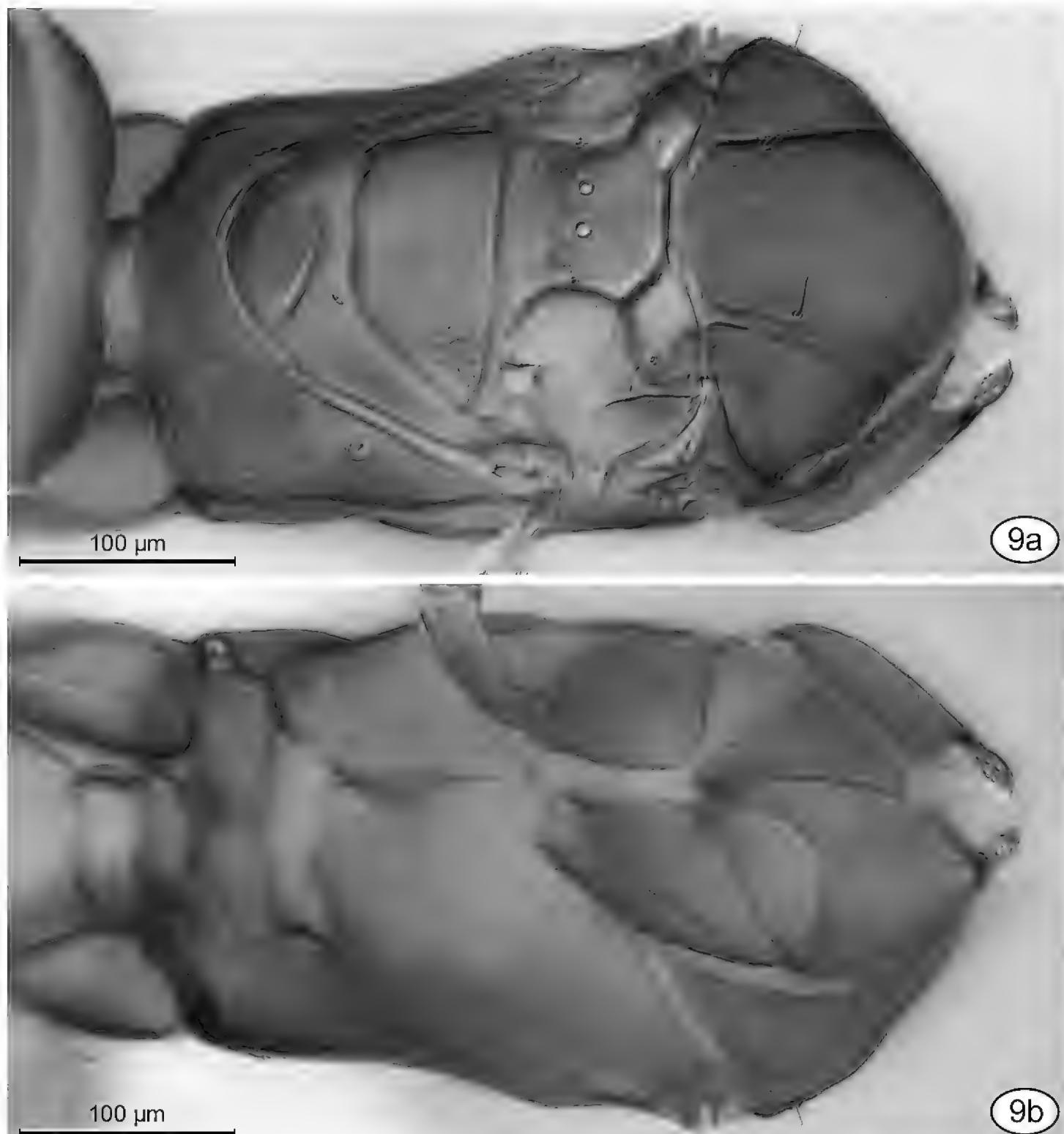


Figure 9. *Neopolynemoidea chilensis* Huber, holotype female **a** mesosoma, dorsal **b** mesosoma, ventral (seen through mesosoma).

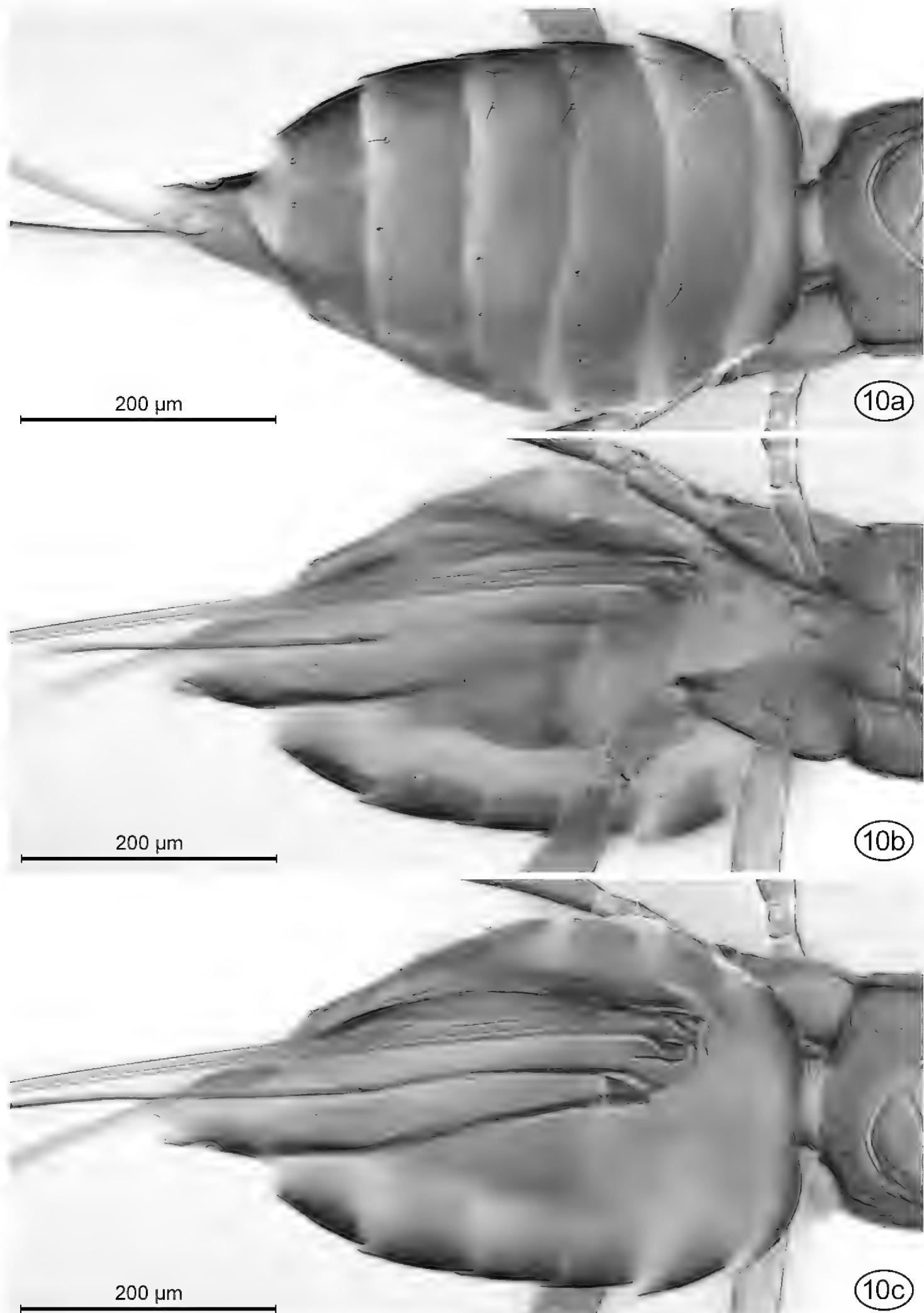
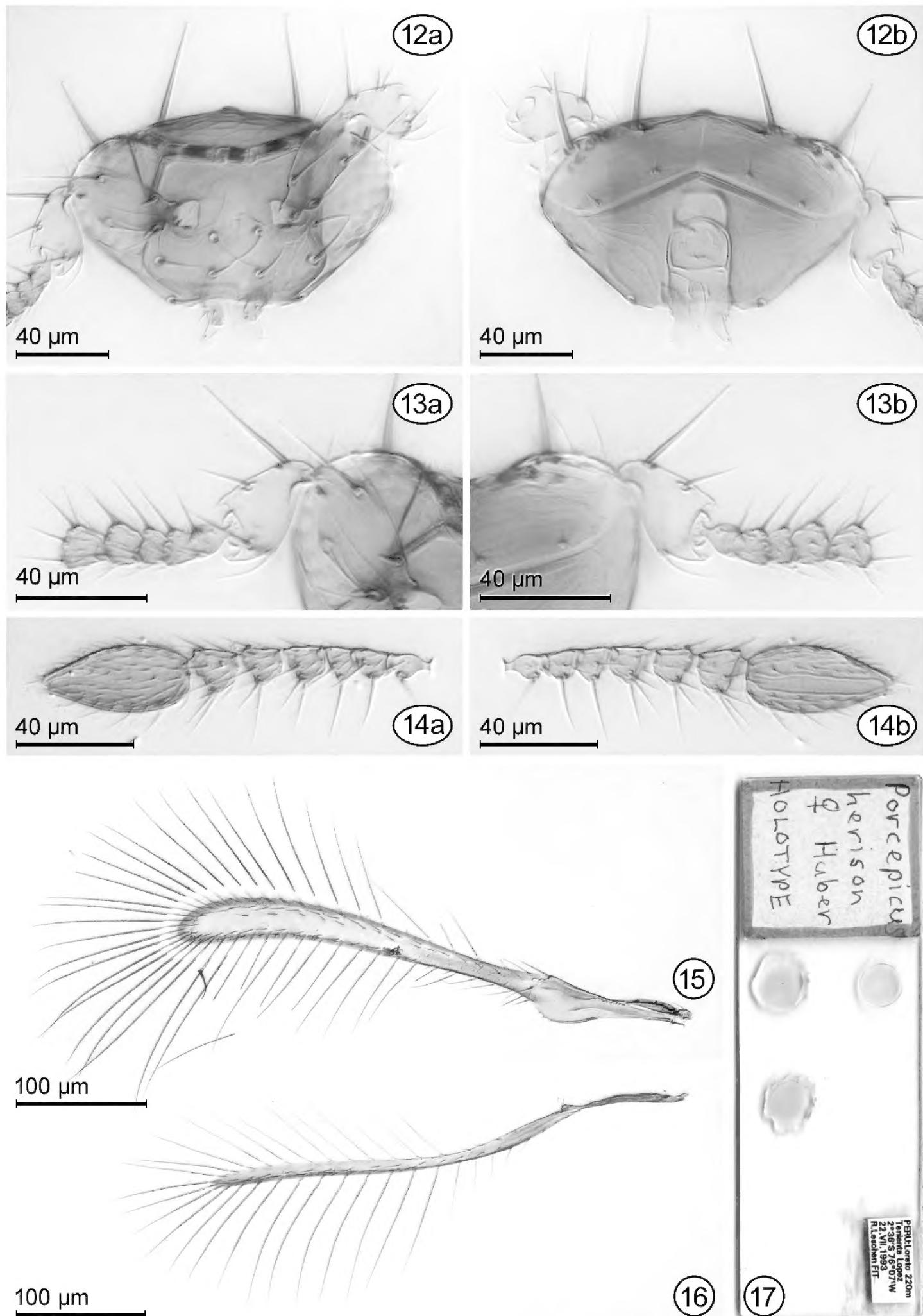


Figure 10. *Neopolyneomidea chilensis* Huber, holotype female **a** metasoma, dorsal **b** metasoma, ventral (seen through metasoma and flipped vertically), showing sterna **c** metasoma, ventral (seen through metasoma and flipped vertically), showing genitalia.



Figure 11. *Porcepicus herison* Huber, holotype female on card, before slide mounting.



Figures 12–17. *Porcepicus herison* Huber, holotype female **12a** head, anterior **12b** head, posterior (seen through head and flipped horizontally) **13a** right antenna (clava and fu₅ missing) **13b** right antenna (opposite surface seen through antenna and flipped horizontally) **14a** left antenna **14b** left antenna (opposite surface seen through antenna) **15** fore wing **16** hind wing **17** holotype slide.

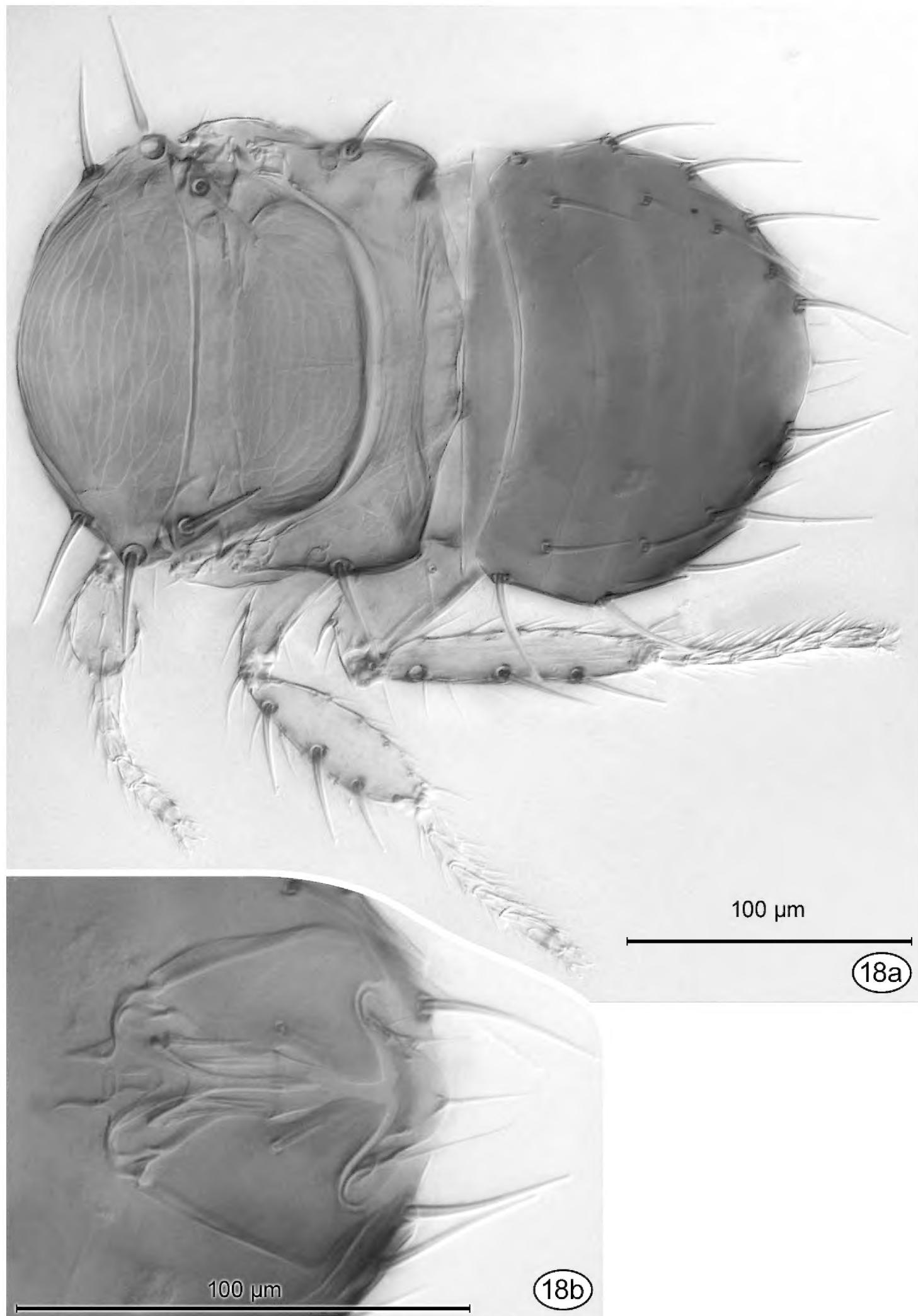
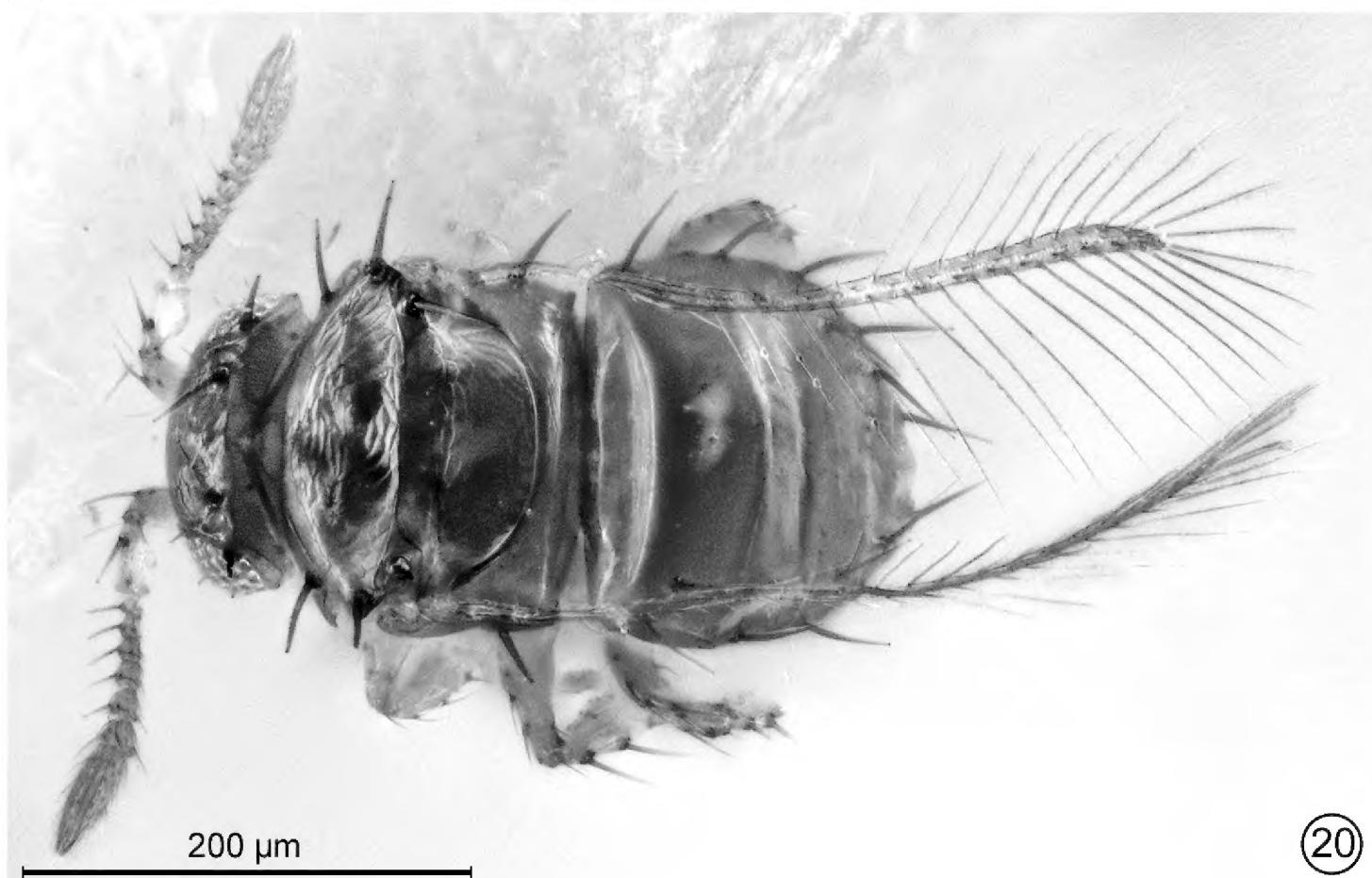
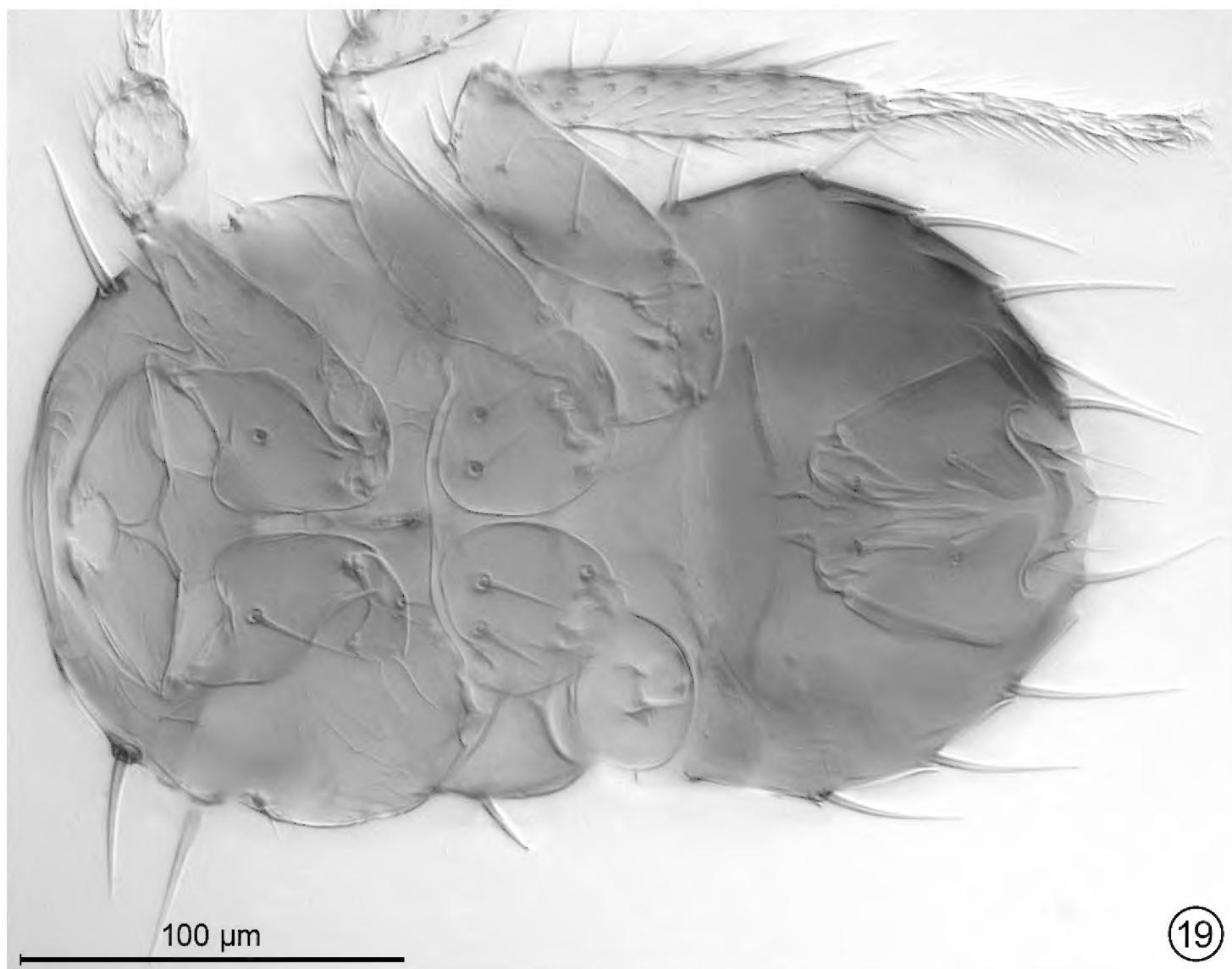


Figure 18. *Porcepicus herison* Huber, holotype female **18a** habitus without head, dorsal **18b** genitalia (seen through gaster).



Figures 19, 20. *Porcepicus herison* Huber 19 holotype, habitus without head, ventral (seen through body and flipped vertically) 20 paratype, habitus, dorsal, fore wings missing.

Acknowledgements

We thank the late T. Erwin, National Museum of Natural History, Washington, DC, for allowing the senior author to sort through some of the rich canopy fogging material he obtained over many years of collecting in Neotropical forests. Much remains to be sorted for Mymaridae, however, so perhaps more specimens of *M. waorani* may still be found in the collected material. We also thank K. Bolte (retired from Natural Resources Canada) who took the photograph of the holotype of *M. waorani*. We thank S. Triapitsyn (UCRC) for recognizing two specimens of *P. herison* in UCRC and recommending their addition to the type series.

References

- Annecke DP, Doutt RL (1961) The genera of the Mymaridae. Hymenoptera: Chalcidoidea. Entomology Memoirs. Department of Agricultural Technical Services, Republic of South Africa 5: 1–71.
- Gibson GAP (1997) Chapter 2. Morphology and Terminology. In: Gibson GAP, Huber JT, Woolley JB (Eds) Annotated keys to the genera of Nearctic Chalcidoidea (Hymenoptera). NRC Research Press, Ottawa, 16–44.
- Guzmán-Larralde AJ, Huber JT, Quiroz-Martínez H (2017) Generic key and catalogue of Mymaridae (Hymenoptera) of Mexico. Zootaxa 4254(1): 1–38. <https://doi.org/10.11646/zootaxa.4254.1.1>
- Huber JT (1995) Chapter 11.11. Mymaridae. In: Hansen PE, Gauld ID (Eds) The Hymenoptera of Costa Rica. Oxford University Press (Oxford), 344–349.
- Huber JT (2006) Familia Mymaridae. In: Hanson PE, Gauld ID (Eds) Hymenoptera de la región Neotropical. Memoirs of the American Entomological Institute 77: 344–349.
- Huber JT (2015) World reclassification of the *Gonatocerus* group of genera (Hymenoptera: Mymaridae). Zootaxa 3967: 1–184. <https://doi.org/10.11646/zootaxa.3967.1.1>
- Huber JT (2017) *Eustochomorpha* Girault, *Neotriadomerus* gen. n., and *Proarescon* gen. n. (Hymenoptera, Mymaridae), early extant lineages in evolution of the family. Journal of Hymenoptera Research 57: 1–87. <https://doi.org/10.3897/jhr.57.12892>
- Huber JT, Read JD, Triapitsyn SV (2020) Illustrated key to genera, and species catalogue of Mymaridae (Hymenoptera) in America North of Mexico. Zootaxa 4773(1): 1–411. <https://doi.org/10.11646/zootaxa.4773.1.1>
- Huber JT, Read JD, Triapitsyn SV (2021) Illustrated key to genera, and species catalogue of Mymaridae (Hymenoptera) in the Afrotropical region. Zootaxa 5036(1): 1–166. <https://doi.org/10.11646/zootaxa.3967.1.1>
- Lin N-Q, Huber JT, La Salle J (2007) The Australian genera of Mymaridae (Hymenoptera: Chalcidoidea). Zootaxa 1596(1): 1–111.